Space Weather Forecast

Issued on Sunday, 21 August 2022 at 13:16 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of Minor Geomagnetic Storm G1 peaking 22 into 23 August. Minor Radio Blackout R1 risk falling.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has fallen to low over the past 24 hours, with just one common class flare peaking at 21/0459 UTC. The sunspot region responsible for most of the recent solar flares, AR3078, has now rotated off the visible disk. The remaining 4 regions on the disk all appear stable and weak.
No Earth-directed Coronal Mass Ejections (CMEs) were observed in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed was symptomatic of both a waning fast wind regime from a coronal hole, and also a minor CME arrival at 20/1725 UTC. The solar wind was mainly elevated, though briefly peaked at strong levels. The associated number of particles in the solar wind showed a relatively flat trend, with the tied magnetic field mostly weak but volatile.
The net result of the above solar wind measures on provisional geomagnetic activity was a peak of Active Kp 4- in the 20/21-24 UTC interval, else being mainly Quiet to Unsettled.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is forecast to be low to very low, with the recent most active sunspot departing the Earth-facing side, with little to compensate on the current face or else arriving over the eastern solar horizon.

Solar Wind / Geomagnetic Activity: The geomagnetic forecast is low confidence throughout, largely the result of the sheer number of mostly minor CMEs from the main recent active sunspot, with some cases of glancing incidence possible, now perhaps most likely on 22 August, with two others having recently arrived (19/1702 UTC and 20/1735 UTC). Otherwise, the current coronal hole-related fast wind is expected to continue to gradually ease, ahead of a second coronal hole fast wind perhaps incident on Tuesday 23 August.
Geomagnetic activity is expected to be rather quiet for much of the period, but with further spells of G1 Minor Storms due to any CME glances, now thought most likely straddling the 22nd and 23rd August.

Energetic Particles / Solar Radiation: Solar radiation storms are unlikely in the period.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.

Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	30	30	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	5	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	2	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.